

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Utility Application of:  
Nigel P. Clarence et al.

Application No.: 10/579,182

Confirmation No.: 1545

Filed: January 22, 2007

Art Unit: 3745

For: PUMP INSERT AND ASSEMBLY

Examiner: N. E. Wiehe

**RESPONSE**

MS RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**INTRODUCTORY COMMENTS**

In response to the Office Action mailed November 1, 2010, please consider the following remarks.

**Remarks/Arguments** begin on page 2 of this paper.

## **REMARKS**

### **Status**

Claims 1-53 are currently pending in the application. The present amendment does not add or cancel any claims. Accordingly, it is claims 1-53 which are at issue.

### **The Rejection**

Claims 1, 2, 5, 6, 8, 11-20, 22-26, 28, 30-37, 44, 45, 47 and 48 stand rejected under 35 U.S.C. §102(b) as being anticipated by Miele (DE 197 18 027). Claim 27 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Miele.

Claims 3, 4, 7, 9, 10, 21, 29, 38-43 and 46 stand objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Remarks Directed to the Rejection of Claims 1, 2, 5, 6, 8, 11-20, 22-26, 28, 30-37, 44, 45, 47 and 48 under 35 U.S.C. §102(b)**

The Applicant respectfully contests the rejections of the present application on the basis of Miele (DE 197 18 027).

Anticipation has always required that each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP 2131. In addition, U.S. patent law also requires that the claims must be interpreted as broadly as their terms *reasonably* allow. Stated differently, the words of the claim must be given their plain meaning unless the plain meaning is inconsistent with the specification and ordinary, simple English words whose meaning is clear and unquestionable, absent any indication that their use in a particular context changes their meaning, are construed to mean exactly what they

say. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1372, 69 USPQ2d 1857 (Fed. Cir. 2004); MPEP 2111.01.

In contrast to the present rejection of the claims, Applicant respectfully submits that each and every element is not found, either expressly or inherently, in Miele, and to interpret Miele such that an anticipation rejection is maintained tortures the use of the English language.

In particular, Miele discloses a washing machine discharge pump with a pump housing (9) and a rotor housing (1) which can be fastened together with a bayonet fitting (12a, 12b). The rotor housing (1) comprises a sleeve-shaped main body (3) and a bearing plate (4). The Examiner in this instance appears to have interpreted the bearing plate (4) of the rotor housing (1) as a pump insert according to the present invention. However, Applicant respectfully submits that the rotor housing (1), including the bearing plate (4) is not an insert as discussed below.

The rotor housing (1) forms the pump and cannot be considered as a pump insert. It is noted that reference numeral "1" of Figure 1 is directed towards the bearing plate (4). The rotor housing (1) is also not an insert located **within** the pump housing (9) as described in claim 1 of the present application (the housing is the housing and not located within itself). Were the device of Miele to be considered analogous to the present invention, then the skilled person may compare the bearing plate portion (4) of the rotor housing (1) of Miele to the closure plate (148) of the present invention.

The Examiner has also interpreted the seal portion (13) of the rotor housing (1) as a pump casing closure plate according to the present invention. However, the skilled person would not even consider the seal portion (13) of the rotor housing (1) of Miele as a pump casing closure **element** in the context of the present application. The present application differentiates pump casing closure elements, such as those disclosed on page 4, line 32 to page 5, line 9, from pump

casing sealing arrangements, disclosed directly thereafter on page 4, lines 10 to 19. A flexible seal portion such as that of Miele (13) cannot be considered as such a closure element. Nonetheless, the Applicant has previously amended the claims to define the pump casing closure element of claim 1 as a pump casing closure **plate**.

The Examiner has asserted that the skilled person would interpret the seal portion (13) of Miele as a (pump casing closure) plate according to the Merriam-Webster dictionary definition of a "smooth flat thin piece of material". However, the particular seal portion (13) of Miele is a sleeve-shaped elastomer integrally-moulded with the rotor housing (1) that the skilled person would not consider as a pump casing closure plate. The Miele seal (13) shown in Figure 2 is substantially cylindrical and should not be considered as a plate under the Merriam-Webster definition. The description of Miele describes the seal (13) in column 2, lines 22-24, as being a circumferential seal moulded to an axially oriented external face of the bearing plate (4). Similar language is included in claim 3 such that the skilled person would not interpret the Miele seal (13) as a pump casing closure plate.

A machine translation of Miele is provided for the Examiner's reference. The seal is not flat: it is sleeve-shaped. Even were any construed flange-like portion of the seal (13) interpreted as flat, the substantial cylindrical portion of the seal (13) would prevent such a contrived interpretation of a "smooth flat piece of material" as also being interpreted as "thin". The relative axial dimension of the cylindrical portion is significantly greater than the radial width of the seal (13) ring portion such that the alleged "plate" would be relatively thick; thus contravening the Merriam-Webster definition of a plate.

Furthermore, the Applicant respectfully directs the Examiner to alternative common dictionary definitions of "plate".

The Cambridge dictionary (<http://dictionary.cambridge.org>) definition of a plate:

“a flat piece of something that is hard and does not bend”.

The seal portion (13) of Miele is not flat; is not hard and bends.

The Oxford dictionary (<http://oxforddictionaries.com>) definition of a plate:

“a thin, flat sheet or strip of metal or other material, typically one used to join or strengthen things or forming part of a machine”.

The seal portion (13) of Miele is not flat; is not a sheet and is not used to join or strengthen (it is used to seal).

The Wiktionary (<http://en.wiktionary.org>) definition of a plate:

“a flat metallic object of uniform thickness”.

The seal portion (13) of Miele is not flat; is not a metallic object and is not of uniform thickness.

The Encarta (<http://encarta.msn.com>) definition of a plate:

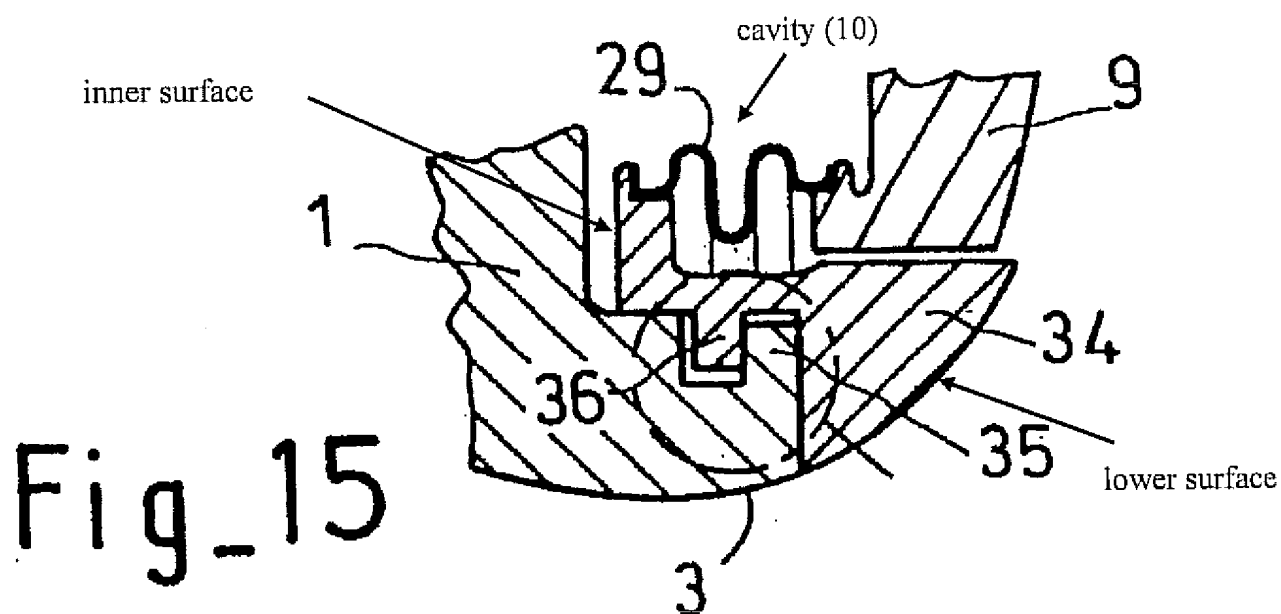
**“thin sheet:** a thin flat rigid sheet or slice of some material, usually of uniform thickness and with a smooth surface”.

The seal portion (13) of Miele is not thin; is not flat and is not a rigid sheet.

Whilst the skilled person would appreciate that a ‘pump casing closure plate’ according to the present invention need not comply with all of the above definitions of a “plate”, the skilled person would also appreciate that the seal portion (13) of Miele complies with **none** of the above definitions of a plate, including that of Merriam-Webster. Accordingly, the skilled person would not consider the seal portion (13) of Miele as a pump casing closure plate and Applicant requests that all of the rejections on the basis of Miele be removed.

In addition to the above, the Examiner has clarified his interpretation that “the inner surface of Lehe is the surface of part (34) that faces inwardly with respect to the pump, i.e. the round surface opposite the part’s (34) connect to the bellows (29)”. The Applicant notes that

“round” can be interpreted as a circular surface (e.g. a line in cross-section, such as Figure 15) or curved (e.g. the curved lower surface proximal reference numerals “34” and “35” in Figure 15). However, the Examiner has further clarified that the inner surface should not be confused with the lower surface as shown in Figs 15 & 16. Accordingly, the Applicant understands the Examiner’s rejections of claims 50 to 53 to be based upon an interpretation of an inner surface of an additional part (34) as follows:



Accordingly the inner surface forms part of a cavity (10) that does not define a portion of a pump volute in use. The cavity (10) is merely used to provide a back-pressure to maintain a small and constant clearance between the intermediate part 9 and the blades 6 of the impeller. The skilled person would not interpret such a cavity (10) as a pump volute. It is further noted that “the pump may comprise means for applying back pressure in the cavity by means of an additional liquid different from the working liquid conveyed by the pump, but of a chemical composition that is compatible with that of the working liquid”. Accordingly, the Applicant respectfully asserts that Lehe does not anticipate any of claims 50 to 53.

**Remarks Directed to the Rejection of Claim 27 under 35 U.S.C. §103(a)**

Claim 27 depends upon independent claim 1 which is believed to be in allowable form.  
Therefore, Applicant believes that claim 27 is in allowable form.

**Conclusion**

In view of the arguments presented herein, Applicant respectfully submits that all claims are in condition for allowance and thus requests that the rejection of the claims be withdrawn and the application moved towards allowance. Any questions, comments, or suggestions the Examiner may have which would place the application in still better condition for allowance should be directed to the undersigned attorney.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 07-1180.

Dated: 5/2/11

Respectfully submitted,

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The invention relates to a synchronous pump, in particular a Laugenpumpe for washing machines or dishwashing machines with a rotor housing, in a rotor rotatably supported connected with an impeller 15 and with a pump casing with and flanged sockets, which intermediate layer of a seal bottom releasable by a connection in the type of a bayonet fixing with the rotor housing is connected.

With washing machines or dishwashing machines the synchronous pump becomes used as Laugenpumpe and is from this reason at a deep point the bottom caustic solution or rinsing container disposed. It must be therefore with a connection system provided that a simple assembly of the pump casing at the rotor housings possible and besides a safe sealing effect ensured. From the DE-OS 19 59 087 a bayonet connection between the rotor housing and the pump casing of a pump is known. As seal a separate O ring which can be inserted functions there likewise. Such a seal possesses the drawback that it often does not maintain the exact position when installing and/or, complete lost to go can. In addition it comes with the manufacturing of the bayonet fixing by the rotation of the two housing parts to each other and the friction at the seal, arising thereby, to undefined deformations, which impair the sealing effect. These appearances arise in particular if the pump becomes again composed with a possible case of repair disassembled and bottom adverse space conditions at the place of assembly of the washing machine or dishwashing machine.

From the DE 86 24 525 U1 a synchronous pump of the initially described type is known.

From the DE 26 04 126 A1 by material conclusion at seal fixed of two housing parts known is. There a soft foam becomes made of polyurethane used the achievement of the sealing effect, which develops with the response of two components. Polyurethane possesses drawbacks regarding the alkali resistance and regarding its adhesive properties, in particular at plastics such as polypropylenes, which become usually the manufacturing of pump casings used.

Thus the problem places itself to the invention to reveal a synchronous pump of the initially described type is possible with which a simple and nevertheless safe connection between rotor housings and pump casings.

This problem becomes according to invention by a synchronous pump with the features dissolved indicated in the claim 1. An advantageous embodiment and a development of the invention result from the subsequent Unteranspruch.

The advantage attainable with the invention arises as a result of the fact that an exact, unchangeable position of the seal is in principle assured, so that the error rate, which can result in the case of installing a separate seal, becomes significant reduced.

When particularly favourably has it proven to train and mould on at the rotor or pump casing the seal from a thermoplastic elastomer (Santoprene). In the interior of the rotor housing as well known the rotor washed around with caustic solution is journaled, whereby a caustic solution-stable material (polypropylene) must become inevitable used. Santoprene possesses the characteristic to be received with polypropylenes a material-conclusive connection so that the seal can be moulded on.

An embodiment of the invention is in the designs pure schematically shown and becomes subsequent more near described. Show:

Fig. 1 the plan view on the rotor housing and the stator (2) formed of a according to invention synchronous caustic solution pump.

▲ top

Fig. 2 the rotor and the pump casing (9) from Fig. 1 in a longitudinal sectional view along the cut line A-A

Into the Fig. 1 and 2 represented synchronous pump possesses a rotor housing (1), is fixed at whose external contour a stator (2). The rotor housing (1) is formed from a caustic solution-stable plastic (polypropylene) and consists of a capsule-shaped main body (3) and an end shield (4). In the main body (3) an hollow cylindrical permanent magnet (5) is enclosed and drehfest or bottom interposition of a known, free-wheel distance with a rotor shaft (6), not represented in the designs, connected. The shaft (6) is by two bearing bushes (7a; 7b) rotatable in the main body



disposed and carries an impeller on its end rising up out of the housing.

The end shield (4), formed to the main body (3), serves not represented and flanged sockets (10 for the attachment of a pump casing (9) also in the designs; 11). The pump casing (9) is likewise made from polypropylenes. The edges of the end shield (4) and the pump casing (9) possess mutual associated catch cams (12a; 12b), which seize against each other by rotation after type of a bayonet fixing into one another (Fig. 1). At an axial directed peripheral surface of the end shield (4) a circumferential seal (13) from a thermoplastic elastomer (Santoprene) is moulded on. This a possible dense connection of the two housings (3; 9).



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1. Synchronous pump, in particular Laugenpumpe for washing machines or dishwashing machines, with a rotor housing (1), in a rotor connected with an impeller (5; 6; 8) rotatably supported is, and with a pump casing (9) with and flanged sockets (10; 11), which releasable by a connection in the type of a bayonet fixing with the rotor housing (1) bottom intermediate layer of a seal (13) is connected, characterised in that the seal (13) by material conclusion with the rotor housing (1) or the pump casing (9) connected is, whereby the rotor housing (1) and/or the pump casing (9) from a caustic solution-fixed plastic (polypropylene) and the seal (13) from one to the rotor housing (1) or to the pump casing (9) moulded on thermoplastic elastomer (Santoprene) formed is.

2. Synchronous pump according to claim 1, characterised in that the seal (13) at an axial directed peripheral surface of an end shield (4) at the rotor housing (1) disposed is.

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